MANAGEMENT PROBLEMS AND OPPORTUNITIES

The goals, objectives and tasks developed for this planning document represent reasonable outcomes and expectations that, for the most part, can be achieved by fisheries district staff during the next 15 years. All goals, objectives and tasks are not of equal importance and are therefore arranged in order of priority to reflect current basin needs related to aquatic habitats, fish communities, recreational use and water quality.

GOAL I: Reduce the supply and transport of coarse sediments in basin streams.

Status:

High quality instream habitat components such as abundant cover, high base flows, good water quality, diverse substrate composition and adequate depths are typical good channel conditions associated with most mainstem reaches. However, all disturbed soils in the basin are hazardously erosive and represent the highest potential for sheet, rill and gully erosion in the state.

Consequently, the transport of coarse sediments (excessive gravel bedloads), caused by historically poor timber harvest and grazing practices in the uplands, and streambank instability, caused by occasional agricultural encroachments into some narrow or absent floodplain corridors, can cause changes in channel hydraulics and loss of streambank protection that can quickly lead to serious streambank erosion problems anywhere in the basin.

Objective 1.1: Reduce soil erosion in the uplands.

Strategy:

Much of the gravel that has accumulated in the floodplains originated from the cherty residuum on the steep-sloped uplands, as evidenced by fresh gravel deposits at the mouths of many first and second order dry stream channels after storm events. The basin contains 2,893 first and second order channel reaches that total 2,415 miles. Landowner involvement and participation is, therefore, essential in order to effectively address upland soil disturbances and losses. We must focus on promoting and encouraging landowner awareness of good land stewardship practices, especially those timber harvest and grazing practices that will produce canopy closure, leaf litter accumulation and less soil compaction. This is a long-term objective that may not produce obvious results quickly.

- * Promote and publicize the advantages of all private land management assistance and services that are available through MDC Forestry Division, University Extension Service, ASCS, SCS and SWCD.
- * Promote awareness and encourage landowner enrollment in and contribute to the preparation of Forest Stewardship Management plans, which by definition include consideration of resource elements related to soil erosion, re-vegetation, wetlands, threatened species, recreation, fish

habitats and riparian corridors.

- * Promote awareness and encourage qualified landowners to participate in the Stewardship Incentive Program (SIP).
- * Cooperate with the SCS and county SWCD boards in the establishment, planning and implementation of erosion reduction projects, such as SALT, EARTH, PL-566 and EPA 319 grants.
- * Through local Forestry staff recommendations and the SCS information network, implement a Neighbor-to-Neighbor type of program that recognizes and applauds landowners for good forest stewardship efforts.

Objective 1.2: Reduce streambank erosion in the floodplains.

Strategy:

The extensive unconsolidated alluvium in the floodplains is a gravel source that enters stream channels primarily through accelerated streambank erosion. Reducing erosion and increasing streambank stability will depend on gaining private and public landowner acceptance of restorative and preventative erosion management approaches that include riparian corridor as well as streambank locations. Restoration will address correcting (with landowner cooperation) the most serious incidents of accelerated erosion that are within the limits of staff expertise, MDC guidelines and administrative approval. Erosion prevention will focus on increasing landowner awareness of and involvement in good streambank and riparian corridor stewardship.

Streambank and Corridor Restoration Tasks:

- * Provide technical stream management advice to all landowners who request assistance. Conduct on-site visits, determine solutions, assess cost and effort feasibilities and then provide appropriate written recommendations to landowners whose interest indicates that the recommendations will be implemented.
- * Implement Landowner Cooperative Projects (tree revetments, hardpoints, grade control structures, solar powered electric fencing and other fencing that withstands out of channel flows, solar powered livestock watering facilities) whenever suitable sites and opportunities occur.
- * In appropriate and favorable situations, promote state and federal agency incentive programs that assist landowners (through technical and financial assistance) with streambank and corridor restoration problems.
- * Photograph (aerial videotape and still) the riparian corridors and streambanks on selected third order and all fourth order and larger streams (approximately 567 miles) to identify, assess and record current streambank and corridor conditions. Reassess and compare the condition of the corridors and streambanks in 10-year intervals by aerial photography, videotape or satellite imagery.

- * Inventory stream frontages and riparian corridors on current and future acquisitions of public lands and recommend corrective or enhancement projects when necessary.
- * Participate in MDC conservation area planning efforts to ensure that all appropriate stream resource needs and opportunities are addressed in approved plans.
- * Provide technical advice to landowners, county and city commissions, highway departments and construction companies on how to properly remove gravel from streams.
- * Review all 404 permit applications, bridge construction, road construction and other development projects to identify possible positive or negative stream impacts.

Erosion Prevention Tasks:

- * Contact all landowners with floodplain frontages and make them aware of the importance of proper streambank and riparian corridor management (Contacts will be prioritized by the greatest frontage lengths and riparian acreages). Also, introduce them to the technical and financial assistance that is available through county, state and federal programs.
- * Sponsor and conduct stream management workshops for landowners and other interested groups.
- * Promote stream programs and stewardship through the information services of SCS, ASCS, SWCD, Farm Bureau and other agriculture media.
- * Develop close working relationships with other private land managers and administrators (MDC Forestry, Wildlife and Natural History, SCS) to cultivate mutual interests and concerns for all land and water stewardship issues.
- * Maintain and advertise stream improvement projects on public and private lands for demonstration purposes.
- * Implement a Neighbor-to-Neighbor type of program that recognizes and applauds good unassisted streambank and corridor stewardship efforts that are currently occurring in the basin.
- * Conduct mail or telephone surveys to measure landowner awareness of stream programs.

GOAL II: Maintain fish species richness at or above current levels while improving the quality of the sport fishery.

Status:

Species richness, as determined by our sampling efforts, has increased by 36% over the past 50 years to 113 species. Only the extirpated pallid shiner and watch listed pugnose minnow have failed to re-appear in post-1941 collections. Eight other state listed threatened fish species, 45 wetland species and 29 intolerant species have enjoyed widespread distribution and abundance throughout most of the basin since 1984. Reproduction, early survival and recruitment of young

sportfishes to stock-size are apparently good. Some quality- and preferred-size recruitment are occurring for all fish species that provide angling interest. Recruitment to quality-size is particularly adequate for common carp, freshwater drum, shadow bass, channel catfish, flathead catfish, bluegill and redhorse suckers. Low recruitment of black basses to quality-size (>12 inches) and shadow bass to preferred-size (>9 inches) is cause for concern. Anglers have indicated disappointment in the density of catfishes and the size of crappies.

Objective 2.1: The diversity and abundance of non-game fishes maintained at or above current levels.

Strategy:

We assume that healthy water quality, excellent habitat diversity and sampling methods are primarily responsible for the increase in species richness and the continuing presence of threatened species. We also assume that successful efforts to improve, protect, diversify or create additional stream habitats will promote the maintenance and possibly increase species abundance. And, we believe that our fish distribution data base is sufficient to document changes in species occurrence and relative abundance.

- * Promote and assist with the acquisition or protection (through purchase, easement and LCP agreements or stewardship programs) of two 15-mile reaches on the Castor and Whitewater rivers which have been designated as "unique habitats" in this plan. Also, all stream problems occurring within the reaches will receive the highest priority management attention.
- * Provide biological and technical information to all interested parties concerning the detrimental effects that the proposed 7,680-acre Bollinger/Cape Girardeau County Lake would have on the Whitewater River "unique habitat" reach.
- * Promote and participate in the acquisition, design and creation of needed wetland habitats in the lower basin. Of particular interest are frontages owned or controlled by the Little River Drainage District:
 - 1. The remnant Dark Cypress Swamp; 4,400 acres on 11 miles of the left descending bank of the Diversion Channel above the Blockhole grade control structure.
 - 2. The extreme lower reaches of Crooked Creek, Whitewater River and Hubble Creek which are part of the 23,000-acre dry detention storage area below the Blockhole grade control structure.
- * Recommend, plan and assist with the installation of stream habitat projects on private frontages whenever opportunities arise. High priority locations are Little Crooked Creek and Little Whitewater Creek.
- * Complete stream habitat improvement projects on public frontages which provide additional local diversity.
- * Implement a survey program (probably periodic seining) to monitor and track the distribution and abundance of threatened and non-game species.

* Assist with implementing approved recovery plans for any state or federally listed rare or endangered fish species.

Objective 2.2: Improve the densities of channel and flathead catfish and the size structures of white crappie, spotted bass and shadow bass to levels that will provide greater angler satisfaction.

Strategy:

We assume that recruitment to larger sizes, particularly into the quality- and preferred-sizes, can often be influenced by harvest regulations. We might also assume that angler harvest becomes progressively more critical in an upstream direction as channel environments are compressed into smaller units. We should not, however, assume that angler harvest is primarily responsible for sportfish population parameters until data that define subbasin fishing pressures and separates angling and natural mortalities are collected.

- * Conduct a sound, cost-effective, Biometrics-designed creel survey to estimate subbasin angler effort, catch, harvest, satisfaction and preference.
- * Until completion of the creel survey, continue to expand the sportfishes data base, with particular emphases on mortality and density estimates for Diversion Channel catfishes and crappies and upper basin spotted bass and shadow bass.
- * Using regulations, stocking, habitat improvement and other techniques, implement management programs that will enhance selected population parameters for target species at appropriate basin locations.

GOAL III: Increase appreciation for basin streams and improve public access to those which are capable of supporting additional recreational use.

Status:

Angler survey information indicates that most fishing activity is concentrated in the lower basin, on the Diversion Channel, where public access facilities are limited and crowded conditions often occur. Float fishing and recreational canoeing are not popular activities in the middle basin, even though stream flows are adequate throughout the year. Comfortable floating in the upper basin is seasonal and dependent upon discharges considerably greater than base flows. Some wade and bank fishing occurs throughout the basin on mainstems and major tributaries. Much of the fishery resource in the basin is probably under-utilized because of a lack of awareness or interest in small streams.

Objective 3.1:

Access sites developed at locations and in sufficient numbers to encourage dispersal of public use throughout the basin.

Strategy:

Completion of approved MDC stream area and stream frontage acquistion plans for the basin

will do much to accommodate the expected increases in stream use activities that are predicted in the Department strategic plan. Rapid implementation of the acquisition plans, with some modifications and priorities that reflect current knowledge of basin conditions, will best provide the needed facilities to spread current and future use. Modifications should include additional access on the 34 miles of Diversion Channel where users are currently crowded onto a single site. Site priorities will focus on acquiring planned access sites that will immediately complement existing sites.

- * Modify MDC acquisition plans to include a Type 4 access on the left descending bank of the Diversion Channel anywhere near the Highway 25 bridge (RM 9).
- * Pursue the acquisition of planned access sites with efforts guided by the following priorities:
 - 1. Diversion Channel at the Allenville bridge (RM 15) to relieve downstream congestion.
 - 2.Diversion Channel at Highway 91 bridge (RM 27) to relieve downstream congestion.
 - 3. Whitewater River at RM 7 to complement the proposed downstream Allenville bridge site on the Diversion Channel.
 - 4.Castor River at Crook's Landing (RM 34) as the furthest upstream floatable (all year) site that will also complement the upstream Marquand Access.
 - 5.Castor River at Gipsy bridge (RM 17) to complement the downstream Sweetgum Access and the proposed upstream Highway 34 site.
- 6.Castor River at Highway 34 bridge (RM 27) to complement the proposed upstream Crook's Landing site and the proposed downstream Gipsy bridge site.
- * Pursue the acquisition of frontage sites with efforts guided by the following priorities:
 - 1. Whitewater River north of Millersville.
 - 2. Whitewater River north of Burfordsville.
 - 3. Whitewater River north of Sedgewickville.
 - 4.Little Whitewater Creek from the mouth to Patton.
 - 5. Crooked Creek near Marble Hill.
- * Improve bank fishing and other recreational opportunities on MDC frontages by implementing or modifying strategies in area management plans.
- * Modify MDC acquisition plans to include a Type 2 access on Crooked Creek in the vicinity of

RM 10 to complement the Blockhole Access on the Diversion Channel.

- * Develop parking facilities at our Hawn, Iron Bridge and Old Plantation acesses.
- * Acquire small, simple parking facilities (one or two cars) at desirable low water bridge crossings through purchase, lease or cooperative agreements with county road districts.

Objective 3.2:

Awareness of stream recreational opportunities and appreciation of stream advocacy increased to a level that will encourage a widespread and diversified public interest in the basin.

Strategy:

Because of suspected low fishing pressure upstream from the Diversion Channel, particularly on Crooked Creek and the Whitewater River, it is assumed that many potential anglers may not be fully aware of all recreational opportunities available in the basin. Careful publicity which focuses on abundant or surplus local stocks, such as redhorse suckers, longear, large common carp or freshwater drum and crayfish, can promote increased use and appreciation of these types of resource elements with minimal risk to other basin populations.

Providing opportunities for the general public to learn about holistic stream ecology will, hopefully, create some stream advocates. More importantly, however, we believe that the ultimate key to sound basin management depends on recruiting, influencing and educating our youth, who will become our present stream advocates and our future stream stewards.

- * Write an annual basin fishing prospectus, for local media publication, which describes the specific fisheries and angling opportunities associated with the Diversion Channel, Castor River, Whitewater River, Crooked Creek, Bear Creek and Little Whitewater Creek.
- * Provide the local and statewide media with timely "How to", "When to", "Where to" articles and interviews that focus attention on activities and places such as: bowfishing floodwaters; wade gigging; daylight float gigging; wade fishing; seasons, baits, methods and techniques for catching particular species; life histories, habits and behaviors of various aquatic animals; scenic sights; interesting geological formations; interesting plant communities; wildlife viewing; swimming holes; sunbathing spots.
- * Publicize the acquisition, development and opening of new public access sites.
- * Conduct recreational use surveys at 5-10 year intervals in conjunction with creel surveys to determine levels of public use and satisfaction.
- * Emphasize stream ecology and good stream stewardship (utilizing aquaria and stream tables where applicable) during presentations at primary and secondary schools and youth organizations such as the Boy Scouts of America, Girl Scouts of America, Future Farmers of America, 4-H and VoAg groups.
- * Conduct outdoor youth events, such as Ecology Day and Solar Day, at a stream site with field

activities that demonstrate stream ecology and good stream stewardship.

- * Facilitate the development and activity of Stream Teams or other groups interested in adopting or otherwise promoting good stewardship and enjoyment of basin streams.
- * Make public presentations that focus on the MDC Streams For The Future program.
- * Provide promotional, educational and technical stream materials to special interest groups, fairs and other special events.

GOAL IV: Meet state standards for water quality.

Status:

Point and nonpoint source pollution is not a serious threat in the basin. Favorable hydrological and geological conditions have combined to produce the wettest basin in the state with permanent, clean, and well sustained base and subsurface flows. Low flow Q-values are high, summer recession rates are low and zero flows have never been recorded at a mainstem gage station. Furthermore, the lack of industrial effluents, the presence of updated municipal sewage treatment facilities and the near absence of irrigation withdrawals further decrease the potential for pollution. Organic nutrient loading from livestock waste runoff and breached no-discharge sewage lagoons probably constitutes the largest water quality threat in the basin. Leachates from sawdust piles and fine sediments from non-permitted gravel mining operations are other sources of pollution.

Objective 4.1: Meet state standards for water quality.

Strategy:

Enforcement of existing state and federal water quality regulations will help reduce the violations that have occurred in the basin. Increasing public, industrial and local government awareness of potential threats should generate more local interest in water quality problems and solutions.

- * Inform the public, through the local media, public presentations and personal contacts, of past and present water quality threats and problems (nutrient loading, chemical spills, agriculture runoff, excessive siltation) and the solutions necessary to protect aquatic communities.
- * Cooperate with other state and federal agencies in investigating, documenting and reporting incidents of pollution and fish kills.
- * Review NPDES, 404 permit applications and other permits and recommend measures to protect aquatic communities.
- * Train and involve interested Stream Teams in water quality monitoring and advocacy and urge them to begin collecting baseline and early warning water quality data.

* Locate active and abandoned sawdust piles and gravel operations and check with the supervising agency for proper permits.

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